SPECIFICATION FOR DOMESTIC WATER HEATERS

Power Combustion, Low NOx Gas-Fired Water Heaters with Nickel-Plated Storage Tanks

Furnish and install **TURBOPOWER**® gas low NOx water heater(s) as manufactured by PVI Industries, LLC of Fort Worth, Texas. Supply quantities and model numbers as indicated on the plumbing schedule.

Gas and Electrical Consumption

The water heater will operate at a minimum of 83% thermal efficiency when tested to ANSI Z21.10.3. The water heater will comply with paragraph 7.2.4.4, the thermal efficiency, the standby loss, and all other requirements of ASHRAE 90.1-1999.

Pressure Vessel and Heating Surfaces

The water heater will be constructed and stamped in accordance with Section IV, Part HLW of the ASME code.

The storage section of the water heater will be National Board Registered for a working pressure of ____ 125 psi (standard) or ____ 150 psi and will be pressure tested at 1-1/2 times working pressure. The heating section of the water heater will be National Board Registered for a working pressure of 150 psi and will be pressure tested at 1-1/2 times working pressure.

The heat exchanger will be a firetube design with the combustion chamber and all heating surfaces completely water-backed. The fireside of the combustion chamber will be of boiler-grade steel. The waterside of the combustion chamber will be non-ferrous. The fire tubes will be solid copper. The heating surfaces will be removable by unbolting from the pressure vessel, allowing 100% access to waterside surfaces. The tank will be accessible in the field through a manway sized opening, allowing access to 100% of interior surfaces. All tank connection fittings will be nonferrous and removable from the tank.

Tank Lining

The tank will be a plated with electroless nickel (EN). Plating will occur after the pressure vessel is completely fabricated and all welding is completed. The EN plating will be a high-phosphorus (10%) and nonporous composition suitable for submersion service (ASTM B733 standard may be used as a guideline). For additional protection against galvanic corrosion, which may occur within the potable water system, the electroless nickel plating may have a high-dielectric-strength polymer overcoat.

The lined tank will not require sacrificial anode rods and none will be used. *Water heaters that use anode rods in a vessel that contains non-ferrous heating surfaces will not be acceptable.*

Burner and Venting

Combustion will be provided by a forced-draft power burner with a gas train meeting the following agency requirement for the input specified:

___ UL (standard) ___ FM ___ IRI ___ Other _____

Burner and heating section will be certified to operate with NOx emissions not to exceed 30 ppm corrected to 3% O_2 (at or above 400,000 Btu) and 55 ppm corrected to 3% O2 (below 400,000 Btu). Water heater will be a category I, non-condensing appliance. It will be UL listed for use with non-pressurized, type B venting material.

(continued)

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Safety Controls

As a minimum, the heater will be equipped with the following:

- electronic flame monitoring with pre-purge (399,000 Btu/h and below) or electronic flame safeguard with pre-purge and flame status indicating lights (400,000 Btu/h and above)
- *immersion* operating thermostat(s)
- an *immersion* temperature limiting device
- an ASME- or AGA-rated temperature and pressure relief valve
- and options as selected on form PV 6452

Warranty Summary

Storage tank:	_____ year (10 standard, 20 optional) Covers manufacturing or material defects, leaks and /or the production of rusty water. Tank coverage will include failure due to scale buildup for the entire warranty period with no provision or condition for maintenance or inspections and no limitations on water chemistry.
Heat exchanger and combustion chamber:	5 year. Covers manufacturing or material defects, leaks, and/or the production of rusty water.
Burner and all heater parts:	1 year

The heater will have a _____ first year or ____ long-life service policy, which will cover replacement labor and freight costs under certain conditions. Initiation and /or continuation of warranty coverage will not be dependent upon annual inspections, regular replacement of anode rods, or water chemistry. Complete copies of all warranties and service policies, including all exclusions and conditions, will be presented to the owner as part of the submittal package. *These summaries are not warranties. Consult warranty and policies for full details.*

Finishing

The storage and heating sections will be completely factory packaged, requiring only job site hookup to utilities, venting, and plumbing. The heater will be insulated, jacketed with enameled steel panels, and mounted on heavy-duty channel skids. The heater will fit properly in the space provided and installation will conform to all local, state, and national codes.

Start Up

Start up on the unit will be performed by factory trained and authorized personnel. A copy of the start up report will be provided to the owner.

Quality Certification and Safety Standards

The heater will be UL classified to standard ANSI Z21.10.3. The water heaters will be manufactured by a company that has achieved certification to the ISO 9001 International Quality System.